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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,957	01/27/2006	Akio Kuroda	NANP129US	9184

23623 7590 08/03/2009  
TUROCY & WATSON, LLP  
127 Public Square  
57th Floor, Key Tower  
CLEVELAND, OH 44114

EXAMINER
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OGUNBIYI, OLUWATOSIN A

ART UNIT	PAPER NUMBER
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1645

NOTIFICATION DATE	DELIVERY MODE
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08/03/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docket1@thepatentattorneys.com  
hholmes@thepatentattorneys.com  
lpasterchek@thepatentattorneys.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/566,957	<b>Applicant(s)</b> KURODA, AKIO	
	<b>Examiner</b> OLUWATOSIN OGUNBIYI	<b>Art Unit</b> 1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-7 and 9 is/are pending in the application.
- 4a) Of the above claim(s) 5-7 and 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/27/06, 7/27/06 and 4/25/08</u> .                            | 6) <input type="checkbox"/> Other: _____                          |

Art Unit: 1645

### **DETAILED ACTION**

Claims 1, 3,5, 6,7 and 9 are pending in the application. Claims 1 and 3 are under examination.

#### ***Election/Restrictions***

Applicant's election with traverse of Group I (claims 1 and 3) in Paper No. 20090317 is acknowledged. The traversal is on the ground(s) that:

Applicant traverses on the grounds that all the claims contain the same general inventive concept, as required under PCT Rule 13.1. In other words, the PCT rules for unity (this application is a National Phase entry from a PCT application) are satisfied. More specifically, all of the claims recite the feature that "a fusion protein that has a polyphosphate kinase and an adenylate kinase in this order from the N-terminal and that has been subjected to a treatment for removing ADP". Under the PCT rules, a group of inventions is considered linked to form a single general inventive concept where there is a technical relationship among the inventions that involves at least one common or corresponding special technical feature. The expression special technical features is defined as meaning those technical features that define the contribution which each claimed invention, considered as a whole, makes over the art. Since all of the claims recite the feature that "a fusion protein that has a polyphosphate kinase and an adenylate kinase in this order 'from the N-terminal and that has been subjected to a treatment for removing ADP", each of the claims possesses this inventive concept as a common or corresponding special technical feature. It is noted that the common inventive concept makes searching a reasonable (but not undue) task for the Examiner.

Applicants arguments are carefully considered is not found persuasive. To the extent that Applicants are arguing that the Groups of Inventions share in common "a fusion protein that has a polyphosphate kinase and an adenylate kinase in this order 'from the N-terminal and that has been subjected to a treatment for removing ADP", and therefore it will not be a search burden to search all the inventions; Applicants are reminded that this application is filed under 35 USC 371 and search burden does not apply when restricting under this statute. As stated in the restriction "unity of invention" rules apply under PCT Rule 13.1 and 13.2.

Art Unit: 1645

As stated in the previous restriction, even though the inventions of these groups require the technical feature of a fusion protein that has a polyphosphate kinase and an adenylate kinase in this order from the N-terminal and that has been subjected to a treatment for removing ADP, this technical feature is not a "special technical feature" as it does not make a contribution over the prior art in view of Satoh et al. Biosci. Biotechnol. Biochem. 68 (6), 12216-1220, June 2004, cited in IDS and thus the groups of invention lack unity. Satoh et al teaches a method of amplifying ATP comprising allowing a fusion protein that has a polyphosphate kinase (PPK) and an adenylate kinase (ADK) in this order from the N-terminal i.e. PPK-ADK wherein the PPK-ADK has been subjected to treatment to remove ADP to act on a reaction mixture comprising ATP, AMP and polyphosphate (polyP) and teaches detection of the amplified ATP. See under materials and methods –"enzyme preparation" and "ATP amplification and bioluminescence assay" on page 1217.

The requirement is still deemed proper and is therefore made FINAL.

Claims 5-7 and 9 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Applicant timely traversed the restriction (election) requirement in Paper No. 20090317

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Acknowledgment is made of applicant's claim for foreign priority based on an application NO: Japan 2003-202992 filed in Japan on 7/29/03.

***Information Disclosure Statement***

The information disclosure statements filed 1/27/06 and 7/27/06 and 4/25/08 have been considered and initialed copies are enclosed.

***Specification***

The disclosure is objected to because of the following informalities: The description of figure 1 on p. 5 lines 25-25 does not completely indicate that figure 1 has parts a and b and 1a is drawn to amplification of ATP in the absence of ARP and figure 1b is drawn to amplification of ATP in the presence of ATP.

The specification is also objected to because it does not contain a reference to the prior international application in the first sentence(s) of the specification of this application or in an application data sheet. It is noted that this application appears to claim subject matter disclosed in prior International Application No. PCT/JP04/11186, filed 7/7/04. A reference to the prior application must be inserted as the first sentence(s) of the specification of this application or in an application data sheet (37 CFR 1.76), if applicant intends to rely on the filing date of the prior application under 35 U.S.C. 119(e), 120, 121, or 365(c). See 37 CFR 1.78(a). For benefit claims under 35 U.S.C. 120, 121, or 365(c), the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of all nonprovisional applications. If the application is a utility or plant application filed under 35 U.S.C. 111(a) on or after November 29, 2000, the specific reference to the prior application must be submitted during the pendency of the application and within the later of four months from the actual filing date of the application or

Art Unit: 1645

sixteen months from the filing date of the prior application. If the application is a utility or plant application which entered the national stage from an international application filed on or after November 29, 2000, after compliance with 35 U.S.C. 371, the specific reference must be submitted during the pendency of the application and within the later of four months from the date on which the national stage commenced under 35 U.S.C. 371(b) or (f) or sixteen months from the filing date of the prior application. See 37 CFR 1.78(a)(2)(ii) and (a)(5)(ii). This time period is not extendable and a failure to submit the reference required by 35 U.S.C. 119(e) and/or 120, where applicable, within this time period is considered a waiver of any benefit of such prior application(s) under 35 U.S.C. 119(e), 120, 121 and 365(c). A benefit claim filed after the required time period may be accepted if it is accompanied by a grantable petition to accept an unintentionally delayed benefit claim under 35 U.S.C. 119(e), 120, 121 and 365(c). The petition must be accompanied by (1) the reference required by 35 U.S.C. 120 or 119(e) and 37 CFR 1.78(a)(2) or (a)(5) to the prior application (unless previously submitted), (2) a surcharge under 37 CFR 1.17(t), and (3) a statement that the entire delay between the date the claim was due under 37 CFR 1.78(a)(2) or (a)(5) and the date the claim was filed was unintentional. The Director may require additional information where there is a question whether the delay was unintentional. The petition should be addressed to: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

If the reference to the prior application was previously submitted within the time period set forth in 37 CFR 1.78(a), but not in the first sentence(s) of the specification or an application data sheet (ADS) as required by 37 CFR 1.78(a) (e.g., if the reference was submitted in an oath or declaration or the application transmittal letter), and the information concerning the benefit

Art Unit: 1645

claim was recognized by the Office as shown by its inclusion on the first filing receipt, the petition under 37 CFR 1.78(a) and the surcharge under 37 CFR 1.17(t) are not required.

Applicant is still required to submit the reference in compliance with 37 CFR 1.78(a) by filing an amendment to the first sentence(s) of the specification or an ADS. See MPEP § 201.11.

Appropriate correction is required.

### ***Claim Objections***

Claims 1 and 3 are objected to because of the use of the acronym ATP, ADP and AMP. Although acronyms are permissible shorthand in the claims, the first recitation of the acronym should be followed by the full meaning.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01.

The preamble of the claim is drawn to a method of amplifying ATP but the method step omits a recited step indicating amplification of ATP after allowing a fusion protein that has a polyphosphate kinase and an adenylate kinase in this order from the N-terminal and that has been

Art Unit: 1645

subjected to a treatment for removing ADP to act on a mixture containing ATP, AMP, and a polyphosphate compound.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1 and 3 are rejected under 35 U.S.C. 102(a) as being anticipated by Satoh et al (Biosci. Biotechnol. Biochem, 68 (6), 1216-1220, June 2004, cited in IDS).

Applicant may rely upon the foreign priority papers to overcome this rejection by submission on the record of the translation of said paper(s) in accordance with 37 CFR 1.55. See MPEP § 201.15.

Claim 1 is drawn to a method for amplifying ATP comprising: allowing a fusion protein that has a polyphosphate kinase and an adenylate kinase in this order from the N-terminal and that has been subjected to a treatment for removing ADP to act on a mixture containing ATP, AMP, and a polyphosphate compound.

Claim 3 is drawn to a method for detecting ATP comprising: allowing a fusion protein that has a polyphosphate kinase and an adenylate kinase in this order from the N-terminal and that has been subjected to a treatment for removing ADP to act on a mixture of ATP, AMP, and a polyphosphate compound to amplify ATP; and detecting the amplified ATP.



Art Unit: 1645

Satoh et al teaches a method of amplifying ATP comprising allowing a fusion protein that has a polyphosphate kinase (PPK) and an adenylate kinase (ADK) in this order from the N-terminal i.e. PPK-ADK wherein the PPK-ADK has been subjected to treatment to remove ADP to act on a reaction mixture comprising ATP, AMP and polyphosphate (polyP) and teaches detection of the amplified ATP. See under materials and methods –“enzyme preparation” and “ATP amplification and bioluminescence assay” on page 1217.

### *Status of Claims*

Claims 1 and 3 are rejected. No claims allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLUWATOSIN OGUNBIYI whose telephone number is 571-272-9939. The examiner can normally be reached on M-F 8:30 am- 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Mondesi can be reached on 571-272-0956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1645

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Oluwatosin Ogunbiyi/  
Examiner, Art Unit 1645

/David J Blanchard/  
Primary Examiner, Art Unit 1643